

**FIGURE 1.** DNA Constructs used in this application. The schematic diagrams represent the expression cassettes which are packaged into the recombinant adeno-associated virus (AAV) vectors. Abbreviations: TR, AAV terminal repeats; PrCBA, cytomegalovirus/chicken beta-actin hybrid promoter; IRES, internal ribosome entry sequence which allows for bicistronic expression of two transgenes; gfp, green fluorescent protein; pA, poly adenylation sequence. Human DNA sequences to model neurodegenerative diseases: APP, amyloid precursor protein mutant form linked to Alzheimer's disease; presenilin 1 mutant form linked to Alzheimer's disease; tau wild type and mutant form linked to fronto-temporal dementia with parkinsonism linked to chromosome 17; alpha-synuclein wild type and mutant forms linked to Parkinson's disease.

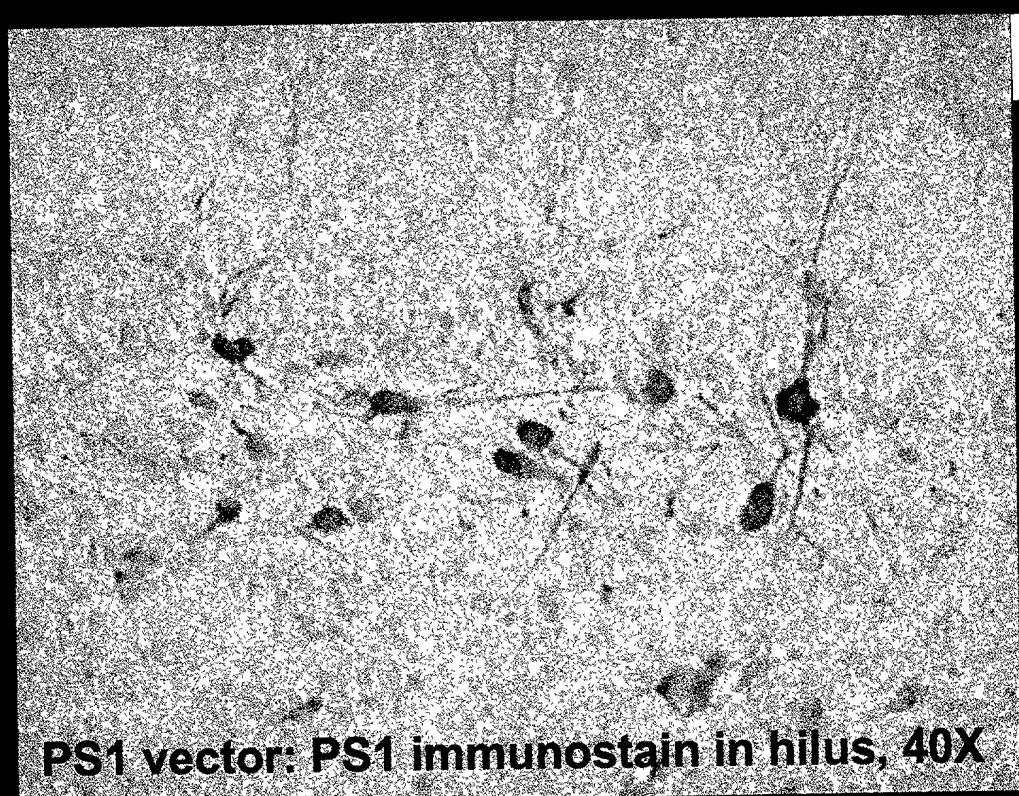
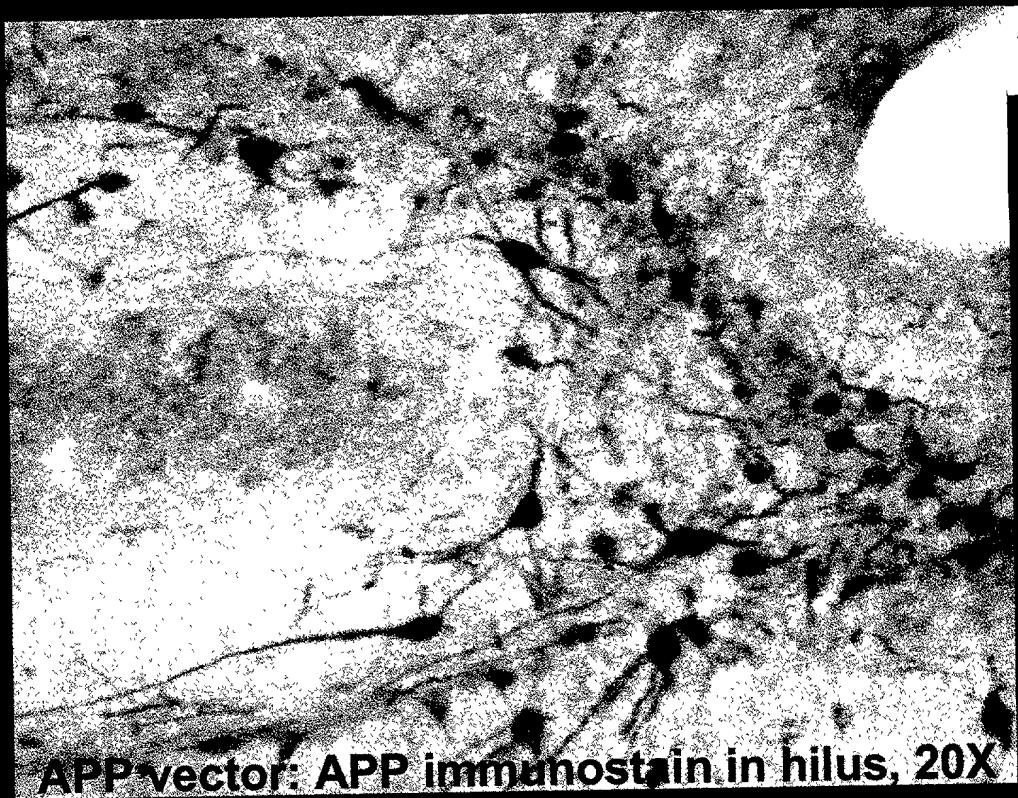


FIGURE 2

3A

red: tau  
green: GFP  
blue: DAPI

3B

filamentous tau

FIGURE 3



FIGURE 3

FIGURE 3

3F

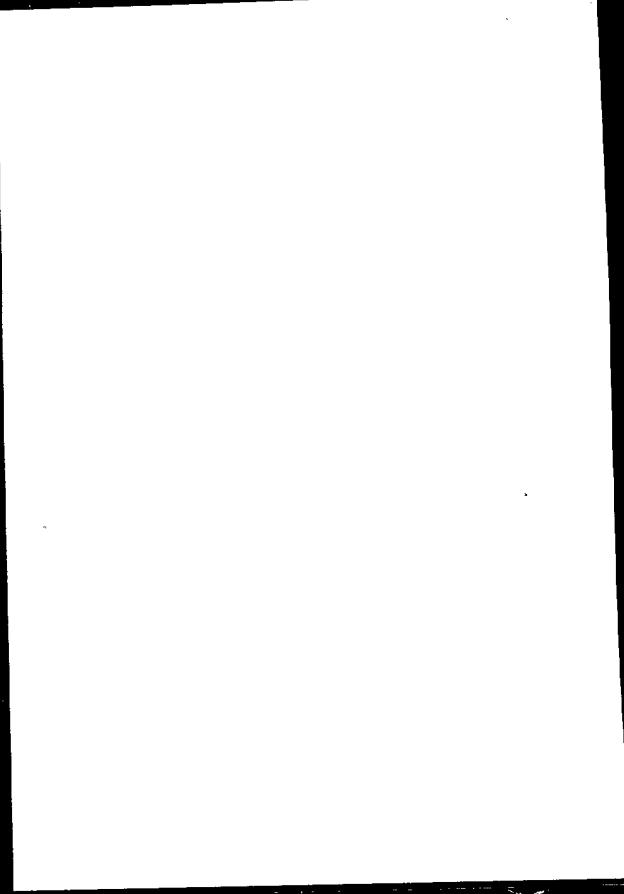
3H

3K

3E

3G

3I



A

C

B

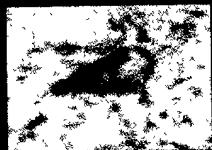
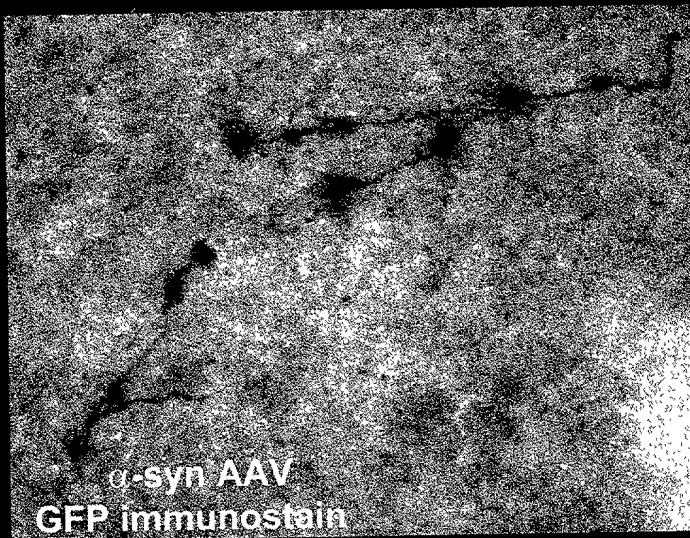


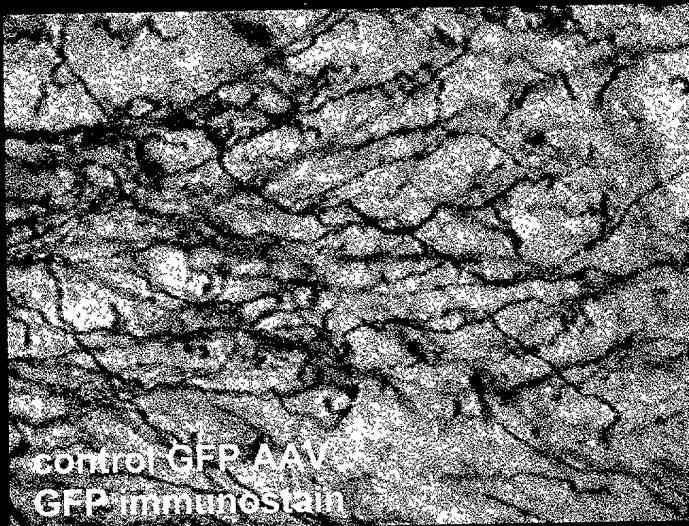
FIGURE 4

A30P  $\alpha$ -synuclein somatic gene transfer and axon morphology

$\alpha$ -syn AAV  
GFP native fluorescence



$\alpha$ -syn AAV  
GFP immunostain



control GFP AAV  
GFP immunostain

4D

4E

4F

FIGURE 4

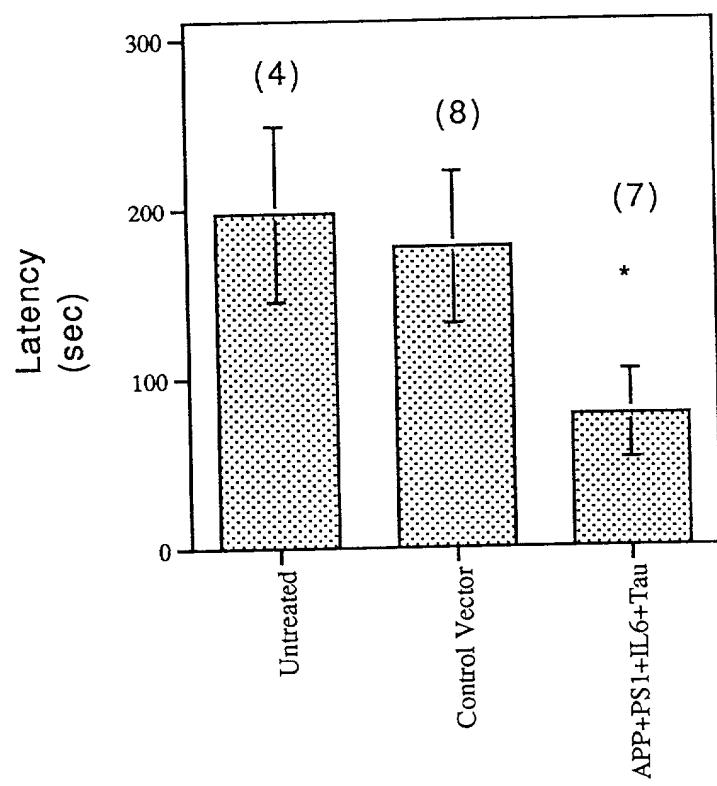
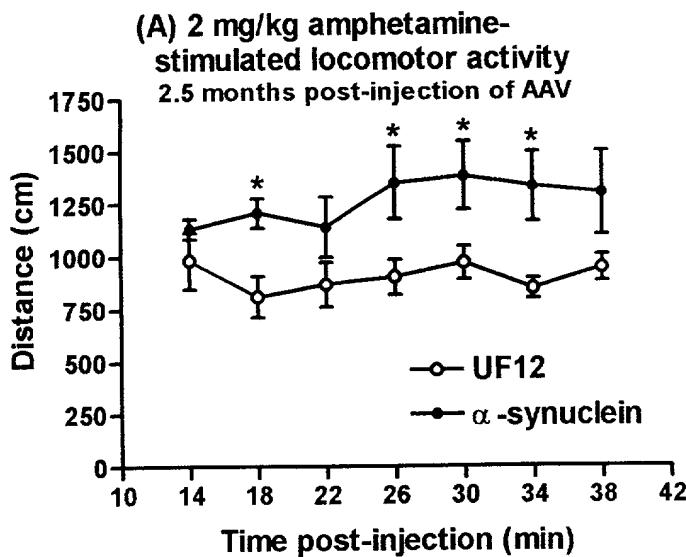
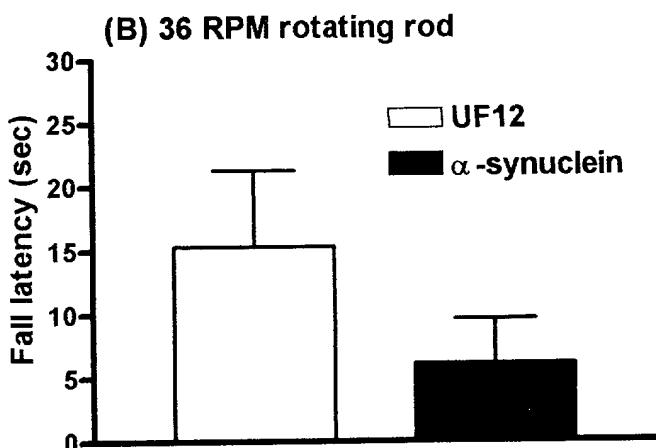


FIGURE 5



6A



6B

FIGURE 6